

What is claimed is:

1. A process for lubricating a sump lubricated, compression ignited internal combustion engine, comprising supplying thereto a low-sulfur, low-phosphorus lubricant comprising:
 - (a) an oil of lubricating viscosity;
 - (b) a substantially nitrogen-free sulfurized olefin antiwear agent in an amount sufficient to provide improved antiwear performance to the composition; and
 - 10 (c) about 1 to about 10 percent by weight of a nitrogen-containing dispersant;
said lubricant formulation containing less than about 0.1 percent by weight phosphorus, less than about 0.4 percent by weight sulfur, and having less than about 1.2% sulfated ash.
- 15 2. The process of claim 1 wherein the lubricant further comprises an overbased detergent.
3. The process of claim 2 wherein the overbased detergent is selected from the group consisting of salixarates, saligenins, salicylates, glyoxylates, and mixtures thereof.
- 20 4. The process of claim 1 wherein the engine is a heavy-duty diesel engine.
5. A low-sulfur, low-phosphorus composition suitable for lubricating a compression ignited internal combustion engine, comprising:
 - (a) an oil of lubricating viscosity;
 - (b) a substantially nitrogen-free sulfurized olefin antiwear agent, in an amount sufficient to provide improved antiwear performance to the composition;
 - 25 (c) about 1 to about 10 percent by weight of a nitrogen-containing dispersant; and
 - (d) an overbased detergent selected from the group consisting of salixarates, saligenins, salicylates, glyoxylates, and mixtures thereof;
said composition containing less than about 0.1 percent by weight phosphorus, less than about 0.4 percent by weight sulfur, and having less than about 1.2% sulfated ash.
- 30 6. The composition of claim 5 wherein the sulfurized olefin antiwear agent is selected from the group consisting of sulfurized C₄ to C₄₀ olefins,

sulfurized vegetable oils, sulfurized lard oil, sulfurized cyclohexene compounds bearing ester substituents, and mixtures thereof

7. The composition of claim 5 wherein the nitrogen-containing dispersant comprises a succinimide dispersant.

5 8. The composition of claim 5 further comprising a zinc dialkyldithiophosphate, wherein the amount of zinc dialkyldithiophosphate is about 0.2 to about 1.2 percent by weight.

9. The composition of claim 8 wherein the alkyl groups of the zinc dialkyldithiophosphate are at least about 50% of secondary.

10 10. The composition of claim 5 further comprising about 0.2 to about 6 percent by weight of an aromatic amine antioxidant or a hindered phenol antioxidant or a mixture thereof.

11. The composition of claim 10 wherein the antioxidant comprises a hindered ester-substituted phenol antioxidant.

15 12. The composition of claim 5 wherein the amount of component (b) is about 0.05 to about 1.5 percent by weight.

13. The composition of claim 5 wherein the amount of component (d) is about 0.1 to about 3 weight percent.

20 14. The composition of claim 5 wherein the composition contains less than about 0.06 percent by weight phosphorus.

15. The composition prepared by combining the components of claim 1.

16. A concentrate comprising:

(a) about 20 to about 60 percent by weight of an oil of lubricating viscosity;

25 (b) about 0.5 to about 15 percent by weight of a substantially nitrogen-free sulfurized olefin antiwear agent;

(c) about 1 to about 40 percent by weight of a nitrogen-containing dispersant; and

30 (d) an overbased detergent selected from the group consisting of salixarates, saligenins, salicylates, glyoxylates, and mixtures thereof;

said concentrate containing less than about 1.2 percent by weight phosphorus, less than about 5 percent by weight sulfur, and having less than about 15% sulfated ash.